

IN THE CLAIMS

A listing of the claims follows:

1. (Currently Amended) A method of preparing a nucleic acid array on a support having a surface upon which said nucleic acid array is prepared, wherein each nucleic acid occupies a separate localized area of the support, said method synthesizing comprising:
 - (a) activating a region of the support;
 - (b) attaching a nucleotide to a first region, said nucleotide having a masked reactive site linked to a protecting group;
 - (c) repeating steps (a) and (b) on other regions of said support whereby each of said other regions has bound thereto another nucleotide comprising a masked reactive site linked to a protecting group, wherein said another nucleotide may be the same or different from that used in step (b);
 - (d) removing the protecting group from one of the nucleotides bound to one of the regions of the support to provide a region bearing a nucleotide having an unmasked reactive site;
 - (e) binding an additional nucleotide to the nucleotide with an unmasked reactive site in a synthesis chamber;
 - (f) repeating steps (d) and (e) on regions of the support until a desired plurality of nucleic acids is synthesized, each nucleic acid occupying a separate known region of the support, thereby preparing a nucleic acid array on said support; wherein the surface of said support is maintained in a position which is vertical or within 30 degrees of vertical during at least step (b) or (e), wherein the support has four vertices and is rotated around an axis perpendicular to said surface by an amount of from about 90 20 degrees or a multiple thereof to about 180 degrees, such that a vertex points downwards, said rotating being done prior to, coincident with or subsequent to each at least one of said attaching or binding steps, whereby said rotated support has a different rotational position during an attaching or binding step relative to the support in a prior attaching or binding step, and wherein at least one of said attaching or binding steps occurs after said support is rotated.

2. (Previously Presented) A method in accordance with claim 1, wherein said support is rotated prior to, coincident with or subsequent to at least 50% of said attaching or binding steps.
3. (Previously Presented) A method in accordance with claim 1, wherein said support is rotated prior to, coincident with or subsequent to at least 80% of said attaching or binding steps.
- 4-5. (Canceled)
6. (Currently Amended) A method in accordance with claim 1, wherein said surface of said support is vertical or within about 10 degrees of vertical and ~~said support is rotated in an amount of about 90 degrees.~~
7. (Currently Amended) A method in accordance with claim 1, wherein said support is a substantially square planar silica chip having four vertices, said surface of said support is vertical or within about 10 degrees of vertical and ~~said support is rotated in an amount of about 90 degrees.~~
8. (Previously Presented) A method in accordance with claim 7, wherein said substantially square planar silica chip is held in a vertical position with one of the four vertices pointing downward.
9. (Previously Presented) A method in accordance with claim 1, wherein at least 10 nucleic acids are synthesized on said surface and wherein each of said 10 nucleic acids is different from each other of said 10 nucleic acids.
10. (Previously Presented) A method in accordance with claim 1, wherein at least 100 nucleic acids are synthesized on said surface and wherein each of said 100 nucleic acids is different from each other of said 100 nucleic acids.

11. (Previously Presented) A method in accordance with claim 1, wherein at least 1000 nucleic acids are synthesized on said surface and wherein each of said 1000 nucleic acids is different from each other of said 1000 nucleic acids.
12. (Previously Presented) A method in accordance with claim 1, wherein at least 10,000 nucleic acids are synthesized on said surface and wherein each of said 10,000 nucleic acids is different from each other of said 10,000 nucleic acids.
13. (Previously Presented) A method in accordance with claim 1, wherein at least 100,000 nucleic acids are synthesized on said surface and wherein each of said 100,000 nucleic acids is different from each other of said 100,000 nucleic acids.
14. (Previously Presented) A method in accordance with claim 1, wherein each separate localized area of the support has an area of less than 1 cm².
15. (Previously Presented) A method in accordance with claim 1, wherein each separate localized area of the support has an area of less than 1 mm².